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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/332,271	06/11/1999	KLAUS FLORIAN SCHUEGRAF	MI22-532	2716

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EXAMINER
POMPEY, RON EVERETT

ART UNIT	PAPER NUMBER
2812	

DATE MAILED: 07/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/332,271	SCHUEGRAF ET AL.	
	Examiner	Art Unit	
	Ron E Pompey	2812	

-- The MAILING DATE of this communication appears n the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 May 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12,15-20,29-32 and 37-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12,15-20,29-32 and 37-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *26* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-12, 15-20, 29-32 and 37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujii et al.(US 5,355,010) in further view of Inoue et al. (US 5,741,725)

Fujii discloses the limitations of:

forming a silicide layer (12, fig. 2C) against the polysilicon layer;

proving an impurity within the silicide layer, by ion implantation; and

providing the polysilicon layer and the silicide layer into a conductive line shape (col. 4, lns. 29 - 65).

Fujii disclose the claimed invention, as disclosed above, except the limitations disclosed by Inoue, below:

Forming an oxide layer over the silicide and activating the conductivity-enhancing impurity within the silicide layer (col. 9, lns. 55-61).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Fujii with Inoue, because Inoue is being used to show that it is well known to RTP a silicide layer in an oxygen atmosphere to form an oxide layer (provided per request of applicant for evidence to support the official notice cited in

the last office action). Also, heating at temperatures above 850^{O}C will activate the dopants (see page 8, lines 12-15 of applicants specification).

3. Fujii discloses the claimed invention except for the other various methods of doping a silicide layer, besides ion implantation. It would have been an obvious matter of design choice to dope the silicide layer by any of the other claimed methods, since applicant has not disclosed that any of the methods of doping in itself solves any stated problem other than the doping of the silicide and it appears that the method of doping silicide is not the critical part of the invention, therefore the invention would perform equally well with any doping method of the silicide. If applicant believes that the choice of methods to dope the silicide layer is a critical step and therefore are distinct inventions. The examiner requires the applicant to elect which process of doping the silicide should be prosecuted based on a species restriction.

Response to Arguments

4. Applicant's arguments with respect to claims 1-12, 15-20, 29-32 and 37-40 have been considered but are moot in view of the new ground(s) of rejection.

Inoue is provided to support the official notice rejection provided in the previous office action. Fujii discloses forming an oxide above the silicide, but fails to explicitly disclose how this is done. Inoue shows that it is well known in the art to form an oxide on a silicide layer via a RTP method and at a temperature sufficient to activate the dopants in the silicide. Also, if applicant believes that one method of doping the silicide

is patentable over another method of doping the silicide, than a species restriction is required due to the different ways to form the doped silicide.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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July 10, 2003

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